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Claims 1-25 (canceled)

26. An apparatus for patterning a recording medium, comprising:

a heat source for generating and directing an incident thermal wave to a recording medium, said thermal wave altering a chemical composition of a recording medium; and

a controller for coordinating a mutual position of said incident thermal wave and said recording medium so as to thermally couple said heat source and said recording medium.

27. The apparatus according to claim 26, wherein said heat source comprises:

a heating plate for developing a thermal energy field which couples said heat source to said recording medium; and

a heat sink connected to said heating plate.

28. The apparatus according to claim 27, wherein said heating plate comprises a tip for concentrating and directing a thermal energy.

29. The apparatus according to claim 27, further comprising:

an optical waveguide coupled to said heat sink, for carrying a focused laser beam.

30. The apparatus according to claim 29, wherein said optical waveguide comprises an optical fiber.

31. The apparatus according to claim 29, wherein said optical waveguide comprises a planar optical waveguide.

32. The apparatus according to claim 27. further comprising:

a resistive heating element thermally coupled to said heat sink.

33. The apparatus according to claim 26. wherein said heat source comprises an atomic force microscope probe.

34. The apparatus according to claim 26. wherein said heat source comprises one of a nanoheater and a near-field thermal probe.

35. The apparatus according to claim 26. wherein said controller coordinates said mutual position of said incident thermal wave and said recording medium to induce a direct thermal coupling that subsumes at least one portion of a thermal near-field.

36. A read/write head assembly. comprising:

a read/write head:

a heat source connected to said read/write head for generating and directing an incident thermal wave to a recording medium. said thermal wave altering a chemical composition of a recording medium: and

a controller for coordinating a mutual position of said incident thermal wave and said recording medium so as to thermally couple said heat source and said recording medium.

37. The read/write head assembly according to claim 36. wherein heat source comprises one of a nanoheater and a near field thermal probe.

38. The read/write head assembly according to claim 36. wherein said chemical composition is altered according to a predetermined pattern. and wherein said heat source patterns said recording medium during a read/write operation of said read/write head assembly.

Claims 39-41 (canceled)